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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/542,036	04/03/2000	Hans-Ueli Roeck	32558	4899

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EXAMINER

CHAU, COREY P

ART UNIT	PAPER NUMBER
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2644

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DATE MAILED: 09/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/542,036

Applicant(s)

ROECK, HANS-UELI

Examiner

Corey P Chau

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,9 and 10 is/are rejected.
- 7) ☐ Claim(s) 3-8 and 11-18 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 4/3/2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____.

DETAILED ACTION

Drawings

1. The drawings are objected to because labels in figs. 1a, 1b, 2, 3, 4, 5, and 6 are inconsistent with specification. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to because fig. 6 is not illustrated as described in specification. The specification recites "The output signal O_{11} of the subtraction unit 11 is operationally connected to the input I_{13a} of a multiplication unit 13 of which the second input I_{13b} receives the output signal of that microphone sub-system 1a which is also applied to the denominator input N of the divider unit 7". The illustration in fig. 6 shows the second input I_{13b} receives the output signal of that microphone sub-system 1a which is also applied to the magnitude-forming unit 5a. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
3. The drawings are objected to because fig. 6, specification, and the equation on page 2, line 17 are not consistent with each other. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
4. For examining purposes, connections and block diagrams in fig. 6 is assumed to be correct. Therefore, appropriate correction is required.

Specification

5. The disclosure is objected to because of the following informalities: On page 1, line 27 recites the limitation "microphone sub-assemblies". There is insufficient antecedent basis for this limitation.

Appropriate correction is required.

6. The disclosure is objected to because of the following informalities: lines 20-25 are not double-spaced.

Appropriate correction is required.

7. The disclosure is objected to because of the following informalities: On page 4, line 14, 15, and 21 contains " c_d and c_d ".

Appropriate correction is required.

8. The disclosure is objected to because of the following informalities: On page 4, line 18 contains "Figs 1 and 1b". An "a" is missing after the "1", which should look like "Figs 1a and 1b".

Appropriate correction is required.

9. The disclosure is objected to because of the following informalities: On page 6, line 3 contains " $3\pi/2 < \varphi < \pi$ ". A "2" is missing in front of the π , which should look like " $3\pi/2 < \varphi \leq 2\pi$ ".

Appropriate correction is required.

Claim Objections

10. Claims 3, 4, 5, 6, 7, 8, 11, 12, 13, 14, 15, 16, 17, and 18 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only. See MPEP § 608.01(n). Accordingly, the claims 3, 4, 5, 6, 7, 8, 11, 12, 13, 14, 15, 16, 17, and 18 has not been further treated on the merits.

Claim Rejections - 35 USC § 112

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 1, 6, and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

13. Claim 1 recites the limitation "said sub microphone-systems" in line 7. There is insufficient antecedent basis for this limitation in the claim.

14. In regards to claim 9, line 30 contains a floating "??"

15. Although claim 6 has not been further treated on its merit, there is an inconsistency in the equation in claim 6, line 3 and the equation on page 2, line 17.

16. Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite in that it fails to point out what is included or excluded by the claim language. This claim is an omnibus type claim.

Claim Rejections - 35 USC § 102

17. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

18. Claims 1, 2, 9, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S Patent No. 5,473,701 to Cezanne et al. (hereafter "Cezanne").

19. Cezanne discloses a method that includes all the limitations recited in claims 1. Referring to claim 1, Cezanne discloses a microphone array (i.e., microphone system) (Fig. 3) that includes a plurality of microphones (i.e., microphone sub-system) (Fig. 3, reference 10 and 12; column 9, line 67) that is well known in the art to convert acoustical energy to electrical energy whereby the output signal of the microphone is a function of the angle of incident (Fig. 3; column 2, lines 49-52; column 4, lines 41-42; column 5, expression 1 and 2); and a unit to constrain (i.e., saturation) the output of the microphone (Fig. 3, reference 55; column 5, lines 46-49). Therefore, the output signal is a function of a product saturated at a predetermined value, where the ratio of the output signals of the microphones is one factor of the product (Fig. 3, references 50 and 55; column 5, lines 6-8; column 5 and 6, expression 5, 6, 7, and 8). While β itself involves a ratio, it is also inherently true, i.e., a mathematical identity, that the product in the numerator of expression (6) in column 6 of Cezanne, which defines β , may be written thus:

$c_B(n)c_F(n) = (c_B(n)/c_F(n))(c_F(n)^2)$ and hence, β , which saturates, is inherently a product, one factor of which is the ratio of the two microphone output signals.

20. Regarding Claim 2, note Cezanna unit is constrained at a maximum value (Fig. 6b; column 5, lines 46-49).

21. Claim 9 and 10 is essentially similar to Claim 1 and 2 and are rejected for the reasons stated above apropos of Claim 1 and 2.

Conclusion

22. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of the art with respect to microphone in general:

U.S. Pat. 4489442 to Anderson et al.

U.S. Pat. 4658425 to Julstrom

U.S. Pat. 6137887 to Anderson

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Corey P Chau whose telephone number is (703)305-4865. The examiner can normally be reached on Monday - Friday 9:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W Isen can be reached on (703)305-4386. The fax phone numbers for the organization where this application or proceeding is assigned are

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(703)872-9314 for regular communications and (703)872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

August 14, 2003


FORESTER W. ISEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100